

# REPORT ON OIL ENGINE MACHINERY.

No. 7373

Received at London Office 8 JAN 1929

Survey Report 4th Jan 1929 When handed in at Local Office 5th Jan 1929 Port of **GOTHENBURG**

Survey held at **GOTHENBURG** Date, First Survey **21st March 1928** Last Survey **29th Dec. 1928**

Number of Visits **74**

on the **Single** **"GLARONA"** Tons { Gross **9912** Net **5221**

**GOTHENBURG** By whom built **AB GÖTAVERKEN** Yard No. **414** When built **1928**

made at **GOTHENBURG** By whom made **A.B. GÖTAVERKEN** Engine No. **1789** When made **1928**

Boilers made at **GOTHENBURG** By whom made **A.B. LINDHOLMEN-MOTALA** Boiler No. **2411** When made **1928**

Portse Power **724** Owners **H. TSCHUDIS TANKREDERIA/S** Port belonging to **OSLO**

Portse Power as per Rule **724** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**

for which vessel is intended **General**

ENGINES, &c.—Type of Engines **Two Direct Oil Engines** 2 or 4 stroke cycle **4** Single or double acting **single**

pressure in cylinders **35 kg/cm<sup>2</sup>** Diameter of cylinders **550Z [21 7/8"]** Length of stroke **600Z [23 5/8"]** No. of cylinders **16** No. of cranks **16**

bearings, adjacent to the Crank, measured from inner edge to inner edge **724Z** Is there a bearing between each crank **Yes**

ns per minute **154** Flywheel dia. **None** Weight **None** Means of ignition **Direct system** Kind of fuel used **Dist. oil**

shaft, dia. of journals **347Z** Crank pin dia. **350Z** Crank Webs **680Z** Mid. length breadth **813Z** Thickness parallel to axis **197-213Z**

el Shaft, diameter **350Z** as fitted **350Z** as per Rule **350Z** Intermediate Shafts, diameter **255Z** Thrust Shaft, diameter at collars **300Z**

shaft, diameter **288Z** as fitted **288Z** as per Rule **288Z** Is the shaft fitted with a continuous liner **Yes**

Liners, thickness in way of bushes **16.4Z** Thickness between bushes **12.3Z** Is the after end of the liner made watertight in the

boss **Yes** If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **Yes**

liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive **Yes**

liners are fitted, is the shaft lapped or protected between the liners **Yes** Is an approved Oil Gland or other appliance fitted at the after end of the tube

**No** If so, state type **Yes** Length of Bearing in Stern Bush next to and supporting propeller **1345Z**

ller, dia. **3658Z** Pitch **2489Z** No. of blades **4** Material **Bronze** Whether Moveable **No** Total Developed Surface **2465-93** sq. feet

nd of reversing Engines **Direct reversible with** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **Yes** Means of lubrication

ed Thickness of cylinder liners **38Z** Are the cylinders fitted with safety valves **Yes** Are the exhaust pipes and silencers water cooled or lagged with

ducting material **Both** If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **Sea funnel**

ng Water Pumps, No. **2** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **Yes**

Pumps worked from the Main Engines, No. **2** Diameter **150Z** Stroke **175Z** Can one be overhauled while the other is at work **Yes**

ps connected to the Main Bilge Line **No. and Size 2 direct driven pumps, 22 tons each, 1 ft. 6 in. discharge pump, 22 tons, 1 ft. 6 in. discharge pump, 22 tons, 1 ft. 6 in. discharge pump**

st Pumps, No. and size **The forward 60 tons steam piston pump, The after 100 tons electric rotary pump** Lubricating Oil Pumps, including Spare Pump, No. and size **2 rotary pumps, 70 tons each**

wo independent means arranged for circulating water through the Oil Cooler **Yes** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

ps, No. and size:—In Machinery Spaces **Three 3 1/2" and two 2 1/2" [Two 2" from effluents in way of same]**

olds, &c. **None** [Two 2 1/2" in hold connected to the forward bilge & ballast pump]

pendent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **One 3 1/2" from bilge pump & one 6" from ballast pump**

all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes **Yes** Are the Bilge Suctions in the Machinery Spaces

from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges **Yes**

all Sea Connections fitted direct on the skin of the ship **Yes** Are they fitted with Valves or Cocks **Both**

they fixed sufficiently high on the ship's side to be seen without lifting the platform plates **Yes** Are the Overboard Discharges above or below the deep water line **Above**

they each fitted with a Discharge Valve always accessible on the plating of the vessel **Yes** Are the Blow Off Cocks fitted with a spigot and brass covering plate **Yes**

at pipes pass through the bunkers **No bunkers** How are they protected **Yes**

at pipes pass through the deep tanks **Main cargo lines** Have they been tested as per Rule **Yes**

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **Yes**

he arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one

partment to another **Yes** Is the Shaft Tunnel watertight **No tunnel** Is it fitted with a watertight door **Yes** worked from **Yes**

a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **Yes**

ain Air Compressors, No. **2** No. of stages **3** Diameters **120.540 & 600Z** Stroke **440Z** Driven by **Main engines**

uxiliary Air Compressors, No. **2** No. of stages **3** Diameters **78.225Z** Stroke **220Z** Driven by **Auxil. engines**

small Auxiliary Air Compressors, No. **1** No. of stages **2** Diameters **34.106Z** Stroke **80Z** Driven by **Steam engine**

avenging Air Pumps, No. **None** Diameter **170Z** Stroke **170Z** Driven by **None**

uxiliary Engines crank shafts, diameter **170Z** as fitted **170Z** as per Rule **170Z**

R RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule **Yes** The injection air received by means of caustic soda solution.

in the internal surfaces of the receivers be examined **Yes** What means are provided for cleaning their inner surfaces **Yes**

there a drain arrangement fitted at the lowest part of each receiver **Yes** Cubic capacity of each **3 of 350 litres**

High Pressure Air Receivers, No. **8** Internal diameter **450Z** thickness **35.5Z**

Seamless, lap welded or riveted longitudinal joint **3 lap welded** Material **Steel** Range of tensile strength **37.7-38.7 kg/cm<sup>2</sup>** Working pressure by Rules **78.5 kg/cm<sup>2</sup>**

standing Air Receivers, No. **2** Total cubic capacity **2 x 15.5 = 31 cubic metres** Internal diameter **1800 & 1850Z** thickness **25 & 25.5Z**

Seamless, lap welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **44.2-50.0 kg/cm<sup>2</sup>** Working pressure by Rules **25.6 kg/cm<sup>2</sup>**

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IS A DONKEY BOILER FITTED? *Yes, two Donkey boilers* If so, is a report now forwarded? *Yes*

PLANS. Are approved plans forwarded herewith for Shafting. *29/4/27, 12/5/27, 21/11/27* Receivers *21/4/27* Separate Tanks *30/1/28*

Donkey Boilers *30/6/27* General Pumping Arrangements *25/10/27, 27/11/27* Oil Fuel Burning Arrangements *✓*

SPARE GEAR *For the main engines with compressors & pumps:*

*sets of exhaust valves with 4 extra valves & seats for same, 1 complete set of air inlet valve with 1 extra valve for same, 1 complete set of fuel valves with 8 extra valves & seats for same, 1 cylinder cooling jacket, 1 piston cooling jacket, 1 piston rings & an additional 3 sets of piston rings for one piston, telescopic cooling pipes for one piston, 1 spare link for 2 chain, 1 set of cylinder cover studs & nuts, 1 gudgeon pin, 4 halves of brasses for same, 4 crank pin bolts & nuts & 2 halves of crank bearing, 4 main bearing bolts & nuts & 2 halves of main bearings, 1 set of bolts & nuts for a crank shaft coupling, 1 set of intermediate shaft coupling, 1 propeller shaft with nut, 2 cast iron propellers, 1 cam roller with pin of each size, 1 set of used in the compressor, 2 halves of gudgeon brasses for the compressor, 2 compressor crank pin bolts & nuts & 2 halves of pin brasses, 4 compressor main bearing bolts & nuts & 2 halves of main bearing brasses, 1 set of all working parts for a fuel pump, 1 set of compressor cooling coils, 10 tubes for the P air cooler, 10 tubes for the L cooler, 8 bursting covers for the starting air piping, 2 set of valves & seats for a barge pump.*

*For the auxiliary engines with compressors & pumps: 1 complete set of valves for one cylinder with their springs & other fittings, 1 set of studs & nuts for one cylinder cover, 1 gudgeon pin, 1 bush for same, 2 crank pin bolts & nuts & 2 halves of brasses & 2 set of piston rings for one piston, 1 cam roller with pin of each size, 1 set of piston rings for one piston, 1 set of suction & delivery valves for each size used in the compressor, 1 set of piston rings for the cooling water pump, 1 HP air cooling coil, 2 bursting covers for the cooling jacket, 1 set of valves & seats for the donkey boiler feed pumps.*

*For the auxiliary pumps: 2 rings for the 100 tons ballast pump, 1 set of valves & seats for the donkey boiler feed pumps, 1 set of suction & delivery valves for the barge & sanitary pump, 60 tons ballast pump in pump room, 1 set of valves & seats for the donkey boiler feed pumps.*

*For the donkey boilers: 2 safety valve springs, 12 ordinary & 8 stay tubes, 1 number of spare parts for the oil fuel pump, 1 quantity of assorted bolts & nuts, 1 length of pipe of each size used for the fuel delivery and injection and main & aux. power cylinders & the delivery for the main & aux. compressors to the receivers with unions & flanges suitable for use.*

The foregoing is a correct description,

AKTEBOLAGET GOTAVERKEN

Umeå, Sweden

Manufacturer.

Dates of Survey while building: During progress of work in shops - *1928 March 31, July 7, 19, 23, 26, 27, 30, 31 Aug 1, 3, 7, 8, 10, 10, 13, 14, 15, 15, 16, 16, 17, 20, 21, 23, 28, 29, 29, Sept 3, 8, 10, 12, 13*  
During erection on board vessel - *1928 Oct 10, 20, Nov 6, 23, 29, 30 Dec 4, 5, 6, 8, 11, 13, 17, 17, 19, 20, 21, 21, 27, 28, 29*  
Total No. of visits *94*

Dates of Examination of principal parts - Cylinders *28, 29, 30, 31* Covers *28, 29, 30, 31* Pistons *28, 29, 30, 31* Rods *28, 29, 30, 31*

Crank shaft *18/28* Flywheel shaft *✓* Thrust shaft *24/10* Intermediate shafts *21/12* Connecting rods *✓*

Screw shaft *24/10* Propeller *8/9* Stern tube *20/10* Engine seatings *10/10* Tube shaft *✓*

Completion of fitting sea connections *6/12* Completion of pumping arrangements *27/12* Engines holding down bolts *20/10*

Crank shaft, Material *Steel* Identification Mark *LLOYDS 4473 487857-58 29.2.28 25.1.28* Flywheel shaft, Material *None* Identification Mark *✓*

Thrust shaft, Material *"* Identification Mark *LLOYDS 77148 2116 EB 24.10.28* Intermediate shafts, Material *Steel* Identification Marks *✓*

Tube shaft, Material *None* Identification Mark *✓* Screw shaft, Material *Steel* Identification Mark *LLOYDS 2799 PK 10.5.28 572.573.574*

Is the flash point of the oil to be used over 150° F. *Yes* Identification marks on aux. engine *✓*

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes* If so, have the requirements of the Rules been complied with *✓*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *✓* If so, state name of vessel *"NIKE"*

Is this machinery duplicate of a previous case? *Yes, except one engine* If so, state name of vessel *"NIKE"*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Main & Auxiliary engines of this vessel have been built under Special Survey and all the requirements of the Rules have been complied with.*

*The workmanship is good and the material fulfils the requirements of the Rules.*

*The shafting as per forging reports attached. Material of starting air receivers as per test sheets attached.*

*The dimensions are as specified and in accordance with the Rules & approved plans.*

*The auxiliary machinery of this vessel consists of one 1-cylinder & two 2-cylinder 4-stroke cycle acting Diesel oil engines with cyl. diam 310 mm & stroke 350 mm, manufactured by Hans AB Gotaverken of this port.*

*The 1-cyl. engine is working a dynamo of 33 KW and the 2-cyl engines engines a dynamo of 66 KW each.*

*The main & auxiliary engines have been tested under full working power on a nine hour trial trip & found to work satisfactorily.*

*The Machinery of this vessel is eligible in our opinion to be classed in the Register Book of this Society with notation of + LHC 12.28.*

*Working pressure of donkey boilers 150 lbs/sq"*

The amount of Entry Fee ... *£ 109.20* When applied for, *5th Jan 1929*

Special ... *£ 2093.84* When received, *11.2.29*

Starting air receivers Donkey Boiler Fee ... *£ 152.88*

Travelling Expenses (if any) £ ... *11.2.29*

Committee's Minute *FRI. 11 JAN 1929*

Assigned *L. MC. 12.28 Oil Engines 2 SB-150 lb. C2*

*V. Nilow G. Snander E. Berner*  
Engineer Surveyor to Lloyd's Register of Shipping.

Survey Fee  
Travelling Exp

Committee's  
Assigned

Lloyd's Register  
Foundation